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| **Module** | **Lessons** | Vocab and Tools | Standards |
| Ratios and Unit Rates (Module 1)  Ratios and Unit Rates (Module 1) | 1: Ratios  2: Ratios  3: Equivalent Ratios  4: Equivalent Ratios  5: Solving Problems by Finding Equivalent Ratios  6: Solving Problems by Finding Equivalent Ratios  7: Associated Ratios and the Value of a Ratio  8: Equivalent Ratios Defined Through the Value of a Ratio  9: Tables of Equivalent Ratios  10: The Structure of Ratio Tables – Additive and Multiplicative  11: Comparing Ratios using Ratio Tables  12: From Ratio Tables to Double Line Diagrams  13: From Ratio Tables to Equations Using the Value of a Ratio  14: From Ratio Tables, Equations and Double Number Line Diagrams to Plots on the Coordinate Plane  15: A Synthesis of Representations of Equivalent Ratio Collections  16: From Ratios to Rates  17: From Rates to Ratios  18: Finding a Rate by Dividing Two Quantities  19: Comparison Shopping – Unit Price and Related Measurement Conversions  20: Comparison Shopping – Unit Price and Related Measurement Conversions  21: Getting the Job Done – Speed, Work and Measurement Units  *Double Number Line*  *Sugar*  *Flour*  22: Getting the Job Done –continued  23: Problem Solving Using Rates, Unit Rates and Conversions  24: Percent and Rates per100  25: A Fraction as a Percent  26: Percent of a Quantity  27: Solving Percent Problems  28: Solving Percent Problems  29: Solving Percent Problems  **Assessment** | New or Recently Introduced Terms  **Ratio** (A pair of nonnegative numbers, , where both are not zero, and that are used to indicate that there is a relationship between two quantities such that when there are units of one quantity, there are units of the second quantity.)  **Rate** (A rate indicates, for a proportional relationship between two quantities, how many units of one quantity there are for every unit of the second quantity. For a ratio of between two quantities, the rate is units of the first quantity per unit of the second quantity.)  **Unit Rate** (The numeric value of the rate, e.g., in the rate mph, the unit rate is .)  **Value of a Ratio** (For the ratio , the value of the ratio is the quotient .)  **Equivalent Ratios** (Ratios that have the same value.)  **Percent** (Percent of a quantity is a rate per .)  **Associated Ratios** (e.g., if a popular shade of purple is made by mixing cups of blue paint for every cups of red paint, not only can we say that the ratio of blue paint to red paint in the mixture is , but we can discuss associated ratios such as the ratio of cups of red paint to cups of blue paint, the ratio of cups of blue paint to total cups of purple paint, the ratio of cups of red paint to total cups of purple paint, etc.)  **Ratio Table** (A table listing pairs of numbers that form equivalent ratios; see example under Suggested Tools and Representations.)  Familiar Terms and Symbols[[1]](#footnote-1)  Convert Tape Diagram  Coordinate Plane Equation  **Suggested Tools and Representations**  Tape Diagrams (See example to the right)  Double Number Line Diagrams (See example below.)  Ratio Tables (See example below.)  *Flour*  *Sugar*  *Ratio Table*  Coordinate Plane (See ex. to the right.) | 6.RP.A.1 - Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”*  6.RP.A.2 - Understand the concept of a unit rate *a/b* associated with a ratio *a:b* with *b ≠ 0*, and use rate language in the context of a ratio relationship. *For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar.” “We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.”*[[2]](#footnote-2)  6.RP.A.3 - Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.   1. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. 2. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* 3. Find a percent of a quantity as a rate per *100* (e.g., *30%* of a quantity means *30/100* times the quantity); solve problems involving finding the whole, given a part and the percent. 4. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.   6.NS.C.8 - Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.  *Tape Diagram*  *Sugar*  *Flour*  ,,  2  3 |

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)